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ABSTRACT

Uses of quantitative research for studying the relationship between school leadership and educational reform are discussed in this paper. Perceived inadequacies of quantitative methods are that such methods are inadequate for dealing with real-life complex phenomena, and that they require degrees of control that cannot be realistically achieved. Valid criticisms are that quantitative methods lack comprehensiveness and depth, "significant" results are practically trivial, and quantitative designs have failed to meet fundamental requirements of quantitative methods. However, the quantitative study of school leadership and school climate has found that: (1) teachers perceive a close relationship between leadership and climate; (2) perceptions of the school by students, teachers, and administrators are independent and interrelated; and (3) student disenchantment with school increases with increasing grade levels. Qualitative methods offer the first and necessary step of description; however, quantitative research is needed to identify predictor variables and develop theoretical models. Two tables and one figure are included. (Contains 8 references.) (LMI)

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Occasional Papers:

School Leadership and Education Reform

OP #5

Quantitative Findings Regarding School Leadership and School Climate

by Samuel E. Krug, Ph.D.

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QUANTITATIVE FINDINGS: REGARDING SCHOOL LEADERSHIP AND SCHOOL CLIMATE

Samuel E. Krug, Ph.D.
MetriTech, Inc.

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Quantitative Findings Regarding School Leadership and School Climate

by

By Samuel E. Krug, Ph.D.

Good scientific theory and effective practice ultimately rest on precise measurement. All science may begin in experience, as Cervantes suggested, but it does not end there. Science is concerned with identifying and explaining consistencies at levels beyond that of simple description or metaphor. Impressive advances in the physical and biological sciences during the past several decades resulted from an increased ability to measure the behavior of particles, planets, or cells and model that behavior mathematically. Similar advances in the social sciences will require us to quantify more precisely the behavior of those we study.

The past century has witnessed intriguing developments in the nature of debate regarding the relative merits of qualitative and quantitative research paradigms in the social sciences. Initially, researchers accentuated philosophical differences that divided them, differences that had their epistemological roots in either realism (quantitative) or idealism (qualitative). For the quantitative researcher, an external reality exists that can be objectively studied and independently verified. The task of scientists is to establish general laws or explanations that increase our control over events. Quantitative researchers collect and analyze data in ways that minimize subjective distortion and personal involvement. The qualitative researcher, at least the early qualitative researcher, adopted a phenomenological perspective in which interpretations of social reality, not a single objective reality, exist. The task of scientists is to provide explanations and support them with rich descriptions based on extensive observations. To achieve such explanations, scientists must immerse themselves deeply in the context rather than abstract themselves.

As time went on, philosophical distinctions began to attract less attention than differences in techniques. In their introduction to research methods, for example, Strauss and Corbin[1] define qualitative research simply as that which "produces findings not arrived at by means of statistical procedures or other means of quantification" (p. 17). They see no fundamental incompatibility when researchers combine quantitative and qualitative methods. They suggest

[1]Strauss, A., and Corbin, J. (1990). *Basics of qualitative research.* Newbury Park, CA: Sage.

rather that the researcher's training and conviction and the nature of the problem define the approach.

Thus, although the paradigms are rooted in two very different ways of thinking about reality, much current writing tends to ignore these epistemological differences. Many view them as alternative paths to the same end. Because the qualitative paradigm evolved later, some have begun to believe that the quantitative paradigm is outdated, inadequate, or inappropriate. The current move toward qualitative inquiry seems based less on the philosophical principles that originally distinguished the two traditions, but rather on perceived inadequacies of the quantitative tradition. Some of these appear to have some validity. Other arguments against the quantitative tradition appear to rest on less certain foundations. Two of the latter, in particular, arise often enough to merit some discussion.

Perceived Inadequacies of the Quantitative Approach

Quantitative methods are inadequate for dealing with real-life complex phenomena that are the true focus of social science. This argument appears in various forms and disguises. For example, quantitative methods are appropriate for studying the behavior of inanimate objects but not the behavior of conscious organisms. Or, much of what is important cannot be quantified; most of what can be quantified is unimportant. Strauss and Corbin voice a similar theme when they suggest that qualitative methods can be used "to uncover and understand what lies behind any phenomenon about which little is yet known" (p. 19).

Perhaps the most important conclusion to be drawn from the first century of scientific study on human behavior is that it is complex[2]. A wide variety of influences such as learning history, the meaning the situation holds for the person, typical reaction patterns, current mood, and ability affect what an individual will do. Some have clear biological links; others have their origins in cognitive activity. Considering this complexity, it seems unreasonable to dismiss an approach for failing to attain 100% predictive accuracy in its first 100 years. It is not true to conclude that quantitative methods are inadequate for dealing with complex behavioral phenomena. However, it is true that human behavior must be studied from a multidimensional perspective. The limited perspective of a narrow range of variables is insufficient to deal with that complexity.

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[2]This is not a trivial finding. In other areas of inquiry the process may have taken much longer. For example, it would be interesting to contrast contemporary scientists' confidence in the "laws of physics" with that of their counterparts of the 18th or 19th centuries.

Many illustrations refute the charge that important variables cannot be quantified. In the study of reading, for example, recent research tells us that a variety of influences, such as topic familiarity, understanding of domain-specific principles, and the reader's purpose, affect comprehension. This view placed a heavy burden on those interested in assessing these broad influences. During the past decade, however, several researchers have explored a variety of creative solutions to the problem. These efforts have led not only to fundamental changes in reading assessment, but corresponding changes in reading instruction. Many other examples show that important influences can be quantified, although it may not always be easy to do so.

Quantitative methods require degrees of control over variables, people, and situations that cannot be realistically achieved. If we hope to understand the predictive relationships among variables, some degree of control is necessary. Otherwise, it would not be possible to discover causal sequences in recurrent patterns or choose among contending, equally plausible hypotheses. Sometimes effective control can be achieved experimentally. Many times it cannot. However, experimental manipulation is not the only way in which the researcher is able to achieve control. A rich array of multivariate statistical models allow scientists to achieve simultaneous control over the interactions of large numbers of variables that cannot be controlled experimentally.

Significant progress has occurred since the beginning of this century when Spearman first advanced his theory of mathematically defined factors that explained performance on complex cognitive tasks. These sophisticated statistical techniques simultaneously consider the interactions of multiple variables. They eliminate the need for scientists to restrict their inquiry to a narrow range of variables in order to fit some imagined restrictions of experimental or statistical design.

Valid Criticisms of the Quantitative Inquiry Paradigm

Some arguments against the quantitative approach disappear under close scrutiny; others do not. Although these criticisms are not damning indictments of the approach itself, they highlight important problems in the ways in which some quantitative research proceeds.

There is a comprehensiveness and depth to qualitative studies that quantitative studies often appear to lack. The rich description and detailed illustrations that typify qualitative, especially ethnographic, studies are often missing in quantitative reports. Quantitative researchers are detached; qualitative researchers immerse themselves in their study. Perhaps this explains a

tendency for some quantitative researchers to find the results of their statistical tests more convincing than do their readers.

Perhaps some of this is a consequence of the philosophical differences that initially distinguished the two positions. For the quantitative researcher, it may sometimes seem enough simply to present the facts because to do otherwise would introduce bias into science. Perhaps quantitative researchers concern for discovering objective reality leads them to emphasize validity at the expense of credibility. However, results of a statistical test are not equally convincing to all audiences. Perhaps it is simply a failure of some quantitative researchers to conduct systematic inquiry. New surveys, questionnaires, and research instruments are too often constructed without adequate thought of linking variables from one study to another. As a result, each study stands alone and results and interpretations do not generalize readily from one experiment to another.

"Significant" results are often practically trivial. Statistically significant correlation coefficients and tests of mean difference are often much less compelling than some writers would have us believe. The use of conventional significance levels in reporting results guarantees only that the findings are probably systematic, not necessarily important. Programmatic research that leads to a persuasive pattern of replicated relationships among a set of theoretically interesting variables is necessary to establish the importance of a set of findings. Unfortunately, programmatic research is not always the norm. Too often quantitative researchers leave readers to puzzle out for themselves the implications and logical extensions of the numbers they report.

There is a balance to be struck. Perhaps this is what William James intended when he remarked "The union of the mathematician with the poet, fervor with measure, passion with correctness, this surely is the ideal." The scientist should strive to provide both numbers and meaningful interpretations of those numbers. Perhaps quantitative researchers need to do more field work in order to make sense of the statistical relationships they discover.

Research designs often fail to meet fundamental requirements of quantitative methods. Statistical methods based on mathematic models of data can only be stretched so far. Assumptions regarding random sampling or assignment can be pushed to the limit when samples of convenience are used or when sample sizes are simply inadequate.

If it takes an accelerator 56 miles in diameter to understand the behavior of subatomic particles,

it is unlikely that a handful of measurements, however elegantly analyzed, will allow us to understand behavior. Most people probably agree that qualitative inquiry, with its emphasis on acquiring rich descriptive data, requires a substantial investment of time and resources. However, many forget that quantitative research in the human sciences is also data intensive. Because there are many influences to be considered and some can be only loosely controlled, the number of observations must be very large in relationship to the number of variables.

Quantitative research requires a substantial commitment to data collection, to data analysis, and to replication if conclusions are to be valid and useful. This is not always an easy task. Results are not always immediately exciting. This concept is not always marketable. But, this is science. The costs of such commitments have unfortunately led some people to adopt what we might call a *quantilative* research approach. Quantilative research begins with a limited sample size, often a sample of convenience, then proceeds to generate more correlations and significance tests than observations. This approach to research will undoubtedly produce conclusions: their validity is another matter.

What Results Have Emerged From Quantitative Study of School Leadership and Climate?

Quantitative inquiry, properly conducted, can enhance our theoretical understanding of significant variables and our control over them. Consider, for example, the relationship between leadership and the climate or culture[3] of an organization. Many authors have suggested that the climate of an organization is an important variable that can be directed by leaders to achieve organizational objectives. Since 1985 an extensive program of research has systematically and quantitatively studied the nature of climate and leadership as it applies to the school setting[4]. Findings and conclusions have begun to emerge that have important implications for the preparation of school leaders and school improvement. Here we have time only for a brief discussion of some of the key issues. The interested reader will want to

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[3]Some writers use the terms climate and culture interchangeably. Culture as a concept includes the beliefs, behaviors, customs, and practices of a social organization. I use the term climate in this chapter to refer more narrowly to a set of beliefs or perceptions about the organization. Although it is reasonable to assume that there is a positive relationship between beliefs and actions, the instruments described later in this chapter assess only perceptions, not actual behavior.

[4]Both the Illinois State Board of Education through its Administrators' Academy and the U. S. Office of Education through Grant R117C80003 to the Center for School Leadership at the University of Illinois, Urbana-Champaign have contributed support for this research. However, the findings, opinions, and recommendations expressed are those of the author and not necessarily those of the State Board of Education, the University, or the Office of Education.

examine some of the suggested readings at the end of this chapter.

The study of instructional leadership can proceed independently of the study of school climate. However, our research suggests that in the minds of teachers, at least, there is very little difference between the two. Our approach has been to investigate both instructional leadership and school climate with psychometrically refined questionnaires and survey instruments. A comprehensive family of instruments now permits us to assess and compare the perspectives of principals, teachers, and students. Table 1 briefly describes five broad dimensions on which we focus in our study of instructional leadership. In one sense, these dimensions can be thought of as key activities in which principals, as instructional leaders, engage. However, it is not easy to point to specific behaviors that constitute or distinguish each dimension. Consequently, it is easier to think of them as strategies that are discernible across a diverse array of behaviors or activities. Thus, writing in the staff newsletter, disciplining students, a PTSA meeting, reading to kindergartners, and post observation conferences with teachers all represent vehicles principals can use to communicate the school's mission and to nurture a climate that values learning. Similarly, there are many ways in which the principal contributes to the task of managing curriculum and instruction, supervises and supports teachers, and monitors the educational progress of students.

In the questionnaires we use, principals and teachers answer the same set of 48 items related to leadership practices. Principals tell how often they engage in that activity. Teachers describe how often such activities occur in their school. Typical items from the surveys[5] include the following: recognize good teaching at formal school ceremonies (mission), review the fit between curriculum objectives and achievement testing (curriculum), model effective teaching techniques for staff (teaching), discuss assessment results with faculty to determine areas of strength and weakness (student progress), write a memo to staff praising their efforts (climate).

We assess the instructional climate of the school in a similar way. Separate instruments for use with principals, teachers, and students allow us to evaluate the same set of variables from each perspective. The variables are among those that research has found to be the most important in understanding organizations: accomplishment, recognition, power, and affiliation. The instruments simultaneously assess several other variables relevant to perceptions of the school (e.g., strength of climate, satisfaction, and commitment). Table 2 provides additional

[5]Items used to illustrate the various leadership and climate dimensions are taken from the Instructional Leadership Inventory or Instructional Climate Inventory and reproduced here with the permission of the copyright holder, MetriTech, Inc., Champaign, IL.

descriptive information about each of these scales. Again, the surveys contain multiple-choice items but their content is very different. Whereas the first set of instruments assess the quality of leadership found in the school, these scales assess more general perceptions of the school itself. For example, to what extent is innovation and creativity nurtured and rewarded (accomplishment)? Is there an effective reward structure in place (recognition)? Is energy within the school directed productively or allowed to degenerate into conflict (power)? Do the relationships among students, teachers, and administrators rest on a foundation of trust and cooperation (affiliation)?

All of the surveys used have been carefully analyzed and standardized. Reliabilities of the scales are very high. A test is reliable when the scores it produces generalize or remain stable across some change in testing conditions. One set of conditions that is of particular interest to us is that of changes in respondents. That is, does a school score convey predictively useful information that can be used by planners to analyze and resolve problems? Would we get the same score if we asked the same questions of different people? For the study of organizations, a test score must generalize well beyond the initial sample of respondents if the score is to be very useful. Of course, not all scores will. To the extent that individual differences predominate over group perceptions in item responses, scales based on those items will not generalize.

That does not appear to be true for these instruments. When surveys are averaged across 10-15 staff members, for example, the results provide a reasonably stable, credible picture of the school. One would expect considerably more diversity in how students perceive the instructional climate of the school. However, comparable levels of precision can be obtained when results from 20-25 students are considered. Of course, the reliability of the scores is directly affected by the number surveyed within a single school. More precise estimates can be obtained as the number surveyed increases.

The development of norms for these instruments that reflect a diverse population of schools, principals, teachers, and students has been another major research goal. The use of these instruments in a variety of research projects has allowed us to accumulate results on several thousand administrators, approximately 10,000 teachers and nearly 50,000 students.

The development of a set of refined instruments has allowed us to untangle the network of relationships that link school leadership to student learning outcomes and to identify new ways of developing effective school leaders. The following section summarizes some of the things

that we have learned and why they may be important for improving the quality of schools.

Perceptions of leadership and climate are very difficult to separate in the minds of teachers. Although the leadership scales we use focus on a much narrower range of behavior than the climate scales, teachers see an intimate connection between the two.

One approach we have used to examine differences between the two is factor analysis. This is a statistical technique that analyzes a large set of observations and reveals a more limited and fundamental set of factors that explain the relationships among observations. Just as a chemist analyzes seemingly diverse compounds into a set of common elements (e.g., hydrogen, oxygen), factor analysis could identify an extroversion factor, for example, within a set of items that involve sociability, warmth, daring, and congeniality.

When we analyze leadership and climate ratings made by teachers in this way, the line between the two areas appears to be very thin. In the same way that a common element, carbon, can be identified in such seemingly diverse substances as coal and diamonds, there is a large general factor that is common to teacher ratings of leadership and instructional climate. Teachers not only see an intimate connection among all five leadership dimensions but also find it difficult to separate them from the instructional climate of the school. There is an interesting parallel here between the way teachers evaluate student leadership and the way teachers evaluate student writing. Research has shown, for example, that various aspects of writing can be reliably distinguished, taught, and assessed. Maintaining topic focus, providing support for a position, presenting ideas in an organized fashion, and adhering to a grammatical structure that the reader understands are all important elements, but they are not writing. When teachers evaluate writing, they consider how students integrate the various elements, not just how they do in each category.

In a similar way, instructional staff seem less concerned with specifics than with the overall quality of the leadership, whether a coherent pattern is evident in the daily activities of school leaders, and the message the school's leadership intends to communicate. This would suggest that people who aspire to provide quality leadership need to spend less time on activity checklists and more time on why they engage in those activities.

Perceptions of the school by students, teachers, and administrators are independent, but interrelated. On the one hand, when we apply factor analysis simultaneously to the principal, teacher, and student ratings of instructional leadership and school climate, we find large rater

factors. That is, three factors whether the ratings come from principals, teachers, or students explain most of the correlation among the original variables. On the one hand, this suggests that one set of perceptions is not directly dependent upon another. On the other hand, there are systematic and important correlations across raters. For example, correlations between principal self-reports and teacher ratings of instructional leadership within the school are consistently positive. In addition, principal self-reports of instructional leadership correlate positively with teacher ratings of satisfaction and commitment. Elsewhere, I have reported that principal self-reports of instructional leadership alone represent about one fourth of the explanation of why students stay committed to school.

These are important relationships that have significant implications for understanding how and why students learn. When we consider the factor-analytic evidence in light of these findings, perhaps the best conclusion is that different perceptions are required to understand the dynamics of a school. If we focus entirely on the principal or on the teaching staff or even on the students, we may miss some key information that helps explain why students benefit from a particular learning environment.

When student perceptions of school climate are studied quantitatively, some interesting patterns can be discerned across the school years. While aggregating large numbers of student surveys across grades, schools, districts, and communities, we found a very clear but disturbing message in what students told us about their schools.

The data in Figure 1 represent the perceptions of students from districts located in four states: Arizona, Florida, Texas, and California. There is no guarantee that the sample speaks for the nation as a whole. However, the sheer size of the sample, more than 17,000 students, affords a certain degree of confidence in the conclusions.

In this study, we combined student ratings of school instructional climate into a single index of positive perceptions. Higher scores on this index mean that students see a stronger emphasis on quality, recognition, trust, cooperation, and shared purpose and vision. When we looked at the results, a general decline in the index across grades was immediately evident, although the raw data was somewhat uneven. When we considered the kinds of equations that could produce such results, a clearer picture began to emerge. What we discovered is that the relationship between student perceptions of school climate and grade in school could be represented by the following equation:

$$\text{Climate} = -4.64(\text{Grade Level}) + .22(\text{Grade Level})2 + 70.00$$

Technically, this equation represents a mathematical model of the relationship between grade level and student perceptions of school instructional climate, not a direct compilation of the data themselves. However, the correspondence between the scores predicted by the model and the actual data is very high.

From the perspective of this model, it does not seem possible to conclude simply that students become increasingly disenchanted with school or that secondary schools are less effective at creating positive learning environments than elementary schools. What this model allows us to see, more clearly than the original data, is two processes at work here. The linear term of the equation represents one process. The quadratic (i.e., squared) term of the equation represents the second. What the model further suggests is that both processes are operating throughout the school years. What this model requires us to do is to search for theoretical explanations of what these two processes might be.

One possibility is that both a maturational (developmental) effect and a school effect operate simultaneously to produce the picture we see. As students mature, social relationships and other activities increasingly vie with school for their interest and attention. Although the school day may largely define the boundaries of a first-grader's day, those boundaries soon begin to shrink. Enabled partly by the instruction they have already received, students begin to participate more fully in a range of outside activities. School loses its attractiveness, not in an absolute sense but compared to the other possibilities that exist. This may be the story told by the linear term of the model.

The school effect, on the other hand, appears to counter this developmental trend. Perhaps the curricula of the third, fourth, and fifth grades do not meet the learning expectations of students who in their first two years learned to read, to write, and to compute, many for the first time. The diversity of the secondary school curriculum may reawaken and stimulate these expectations. Or perhaps that increased opportunities for social relationships through secondary school extracurricular activities help to reestablish the value of school as an important place to be in students' minds. We don't yet know what the final answers are. However, by going through this process of precise, quantitative inquiry, we see certain relationships and patterns more clearly than we could at the purely descriptive level.

Summary

Epistemological differences aside, there is an intimate relationship between description and quantification in science. Inquiry usually begins at the simplest level of description. These attempts to identify basic features or characteristics of phenomena often lead to the development of taxonomies and classification schemes that help to organize our observations. This is a first step and a necessary step in the process of scientific inquiry. But it is not a sufficient step.

Consider, for example, depression, which has been said to have caused more human suffering than any single disease. Clinical descriptions of depression or melancholia by Hippocrates 2,400 years ago, by Plutarch 1,800 years ago, and by Pinel 200 years ago are strikingly contemporary and amazingly accurate. However, they are of very little value in helping to identify precipitating features in depression and to direct the course of therapy or to develop theoretical models that do.

Important findings emerge when quantitative inquiry proceeds systematically and programmatically. This chapter described such an approach to the study of leadership and instructional climate. The results have implications for developing school leaders, for creating more positive learning environments, and for creating more effective schools.

Suggestions For Further Reading

Firestone, W. A. (1987). Meaning in method: The rhetoric of quantitative and qualitative research. *Educational Researcher, 16*(7), 16-21.

Guba, E., & Lincoln, Y. (1988). Do inquiry paradigms imply inquiry methodologies? In D. M. Fetterman (Ed.), *Qualitative approaches to evaluation in education: The silent scientific revolution* (pp. 215-246). New York: Praeger.

*Krug, S. E. (1989). Leadership and learning: A measurement-based approach for analyzing school effectiveness and developing effective school leaders. In C. Ames & M. L. Maehr (Eds.) *Advances in motivation and achievement,* Volume 6. Greenwich, CT: JAI Press, 249-277.

*Krug, S. E., Ahadi, S. A., & Scott, C. K. (1991). Current issues and research findings in the study of school leadership. In P. Thurston & P. Zodiates (Eds.), *Advances in Educational Administration,* Volume 2. Greenwich, CT: JAI Press.

*Maehr, M. L., & Fyans, Jr., L. J. (1989). School culture, motivation and achievement. In C. Ames & M. L. Maehr (Eds.), *Advances in motivation and achievement,* Volume 6. Greenwich, CT: JAI Press, 215-247.

Salomon, G. (1991). Transcending the qualitative-quantitative debate: The analytic and systemic approaches to educational research. *Educational Researcher, 20*(6), 10-18.

Smith, J. K., & Heshusius, L. (1986). Closing down the conversation: The end of the quantitative-qualitative debate among educational inquirers. *Educational Researcher, 15*(1), 4-13.

Note: The asterisked items are also available from the National Center for School Leadership as project reports. Call 800-643-3205 for ordering information.

Table 1

Descriptions of Five Instructional Leadership Dimensions

DEFINES MISSION

People who score high in this area often discuss the school's purpose and mission with staff, students, and the school community. They take advantage of opportunities to stress and communicate school goals. Further, they try to make themselves visible in the school building and they communicate excitement about education to staff and students.

MANAGES CURRICULUM AND INSTRUCTION

High-scorers provide information teachers need to plan their work effectively. They work to ensure a good fit between curriculum objectives and achievement testing and actively support curriculum development. Their primary emphasis as administrator is with instructional rather than administrative issues.

SUPERVISES TEACHING

People who score high spend time encouraging staff to try their best. They coach and counsel teachers in a supportive manner. They attempt to critique teachers as though they were a mentor rather than an evaluator. They encourage teachers to evaluate their own performance and set goals for their own growth.

MONITORS STUDENT PROGRESS

People who score high in this area regularly review performance data with teachers and use this information to gauge progress toward the school's goals. They provide teachers with timely access to student assessment information.

PROMOTES INSTRUCTIONAL CLIMATE

Administrators who score high in this area nurture learning in a variety of ways. They encourage teachers to innovate. They regularly recognize staff members' efforts, write letters of commendation for a job well done, and ask parents to praise teachers for their good work.

Table 2

Descriptions of Four Instructional Climate Variables

ACCOMPLISHMENT

High scores on Accomplishment mean that the rater perceives the school as emphasizing excellence. They describe the school as being very supportive of teachers who try new ideas. Considerable latitude exists for creativity and innovation. The school emphasizes quality education and there is a clear focus on excellence.

RECOGNITION

This variable assesses reinforcement systems within the school When this scale is high it means the rater perceives the school climate as valuing and rewarding good efforts. Productivity is very visibly rewarded and payoffs for doing a good job are readily available. Overall, the school's environment is viewed as a very positive one. The school not only encourages effort but also does something concrete about it in terms of a well-regarded reward system.

POWER

This variable assesses the distribution and focus of energy within the school. A high score means the rater perceives the school as one that places considerable emphasis on competition. Conflict may occur often, but is probably viewed as a necessary by-product of competition. High scores do not necessarily describe a hostile and destructive atmosphere if the school consciously sets this tone in the hopes of encouraging maximum achievement.

AFFILIATION

When this scale is high, a strong supportive feeling exists that is felt by those within the school. Sharing of information, involvement in decision making, and mutual cooperative problem solving are some activities that describe the climate. Teachers and students feel that the school cares about them. Thus, words such as caring, sharing, trusting, and cooperative correctly describe the school's climate.

Figure 1

Student Perceptions of School Instructional Climate

Across Grad Levels (3-12)